AVS 2005 Award Winner Profiles
Learn how the top AVS award winners got started with their careers and what they enjoy both professionally and personally by reading their profiles in the General Topics section. This year’s winners are:

- Medard W. Welch: Charles Fadley
- Albert Nerken: Dick Brundle
- John A. Thornton: Stan Veprek
- Peter Mark: Jane Chang

Member Renewal
AVS membership renewal season officially began on September 7, 2005. Try out our online renewal form to save yourself some time! Remember to renew by December 31, 2005, to ensure no disruption in membership services! A list of new members can be found in the Member Highlights section.

NOW OPEN FOR BUSINESS – AVS STORE!
Visit the AVS Store to purchase Educational Materials and Logo Products at any time, day or night. Our wide selection of monographs, books, videos and DVDs are now only a mouse-click away. You can see the products and read short descriptions of their contents. Show your pride in AVS membership by purchasing a t-shirt, sweatshirt or AVS hat! VISA, MasterCard and American Express are accepted at the AVS Store and your transition safety is ensured by our secure server.

ICMI Call for Papers
The 2006 AVS and SEMATECH sponsored International Conference on Microelectronics and Interfaces (ICMI ‘06) will continue the mission of the previous six annual ICMI conferences: to provide a unique opportunity for industrial, government, and academic scientists and engineers working in the areas of microelectronic devices, processing, and process integration to gather and exchange ideas regarding the challenges of nanodevice fabrication. For more details visit the International Symposia section of the AVS website.

AVS Housing Reservation Incentive Program Winners
AVS is pleased to announce and congratulate the winners of our Housing Reservation Incentive Program; see the International Symposia section for details.
Image Credit: The surface of a 4 µm-thick GaSb film grown on a GaAs(001) substrate by molecular beam epitaxy. The image, with a field of view of approximately 1 µm, reveals the nanometer-scale morphology of the spiral-like structures that grow around threading dislocations in the film (caused by the film's 7% lattice mismatch with the substrate). Each threading dislocation creates a 0.3 nm-height "step" where it emerges at the surface. From work by P. M. Thibado, B. R. Bennett, B. V. Shanabrook, and L. J. Whitman. Graphics by L. J. Whitman.

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A year goes fast. Now, coming off a very successful 52nd International Symposium and Exhibition, I have the opportunity to review some of the accomplishments that we made in 2005 and provide an assessment of possible future directions.

Among our accomplishments for 2005, the 52nd International Symposium and Exhibition, under the direction of Chair Steve George, Symposium Program Vice-Chair Angus Rockett, Local Arrangements Chair, Luke Hinkle, and Local Arrangements Vice-Chair, Dick Jacobs, was outstanding success. It featured 1,280 presentations, including 184 invited talks, 158 companies exhibiting, and topical conferences on DNA, Renewable and Alternate Energy, and the Science of Semiconductor White Light. The final attendance figure is 2,138, which is an increase relative to last year's number of 2,093 for Anaheim.

A second major accomplishment is the new BioInterphases journal, which is expected to begin publication in March 2006. This Journal is the result of the cumulative efforts of many people, including the Editor, Michael Grünze, the Chair of the Publications Committee, Greg Exarhos, and the members of the Publication Committee. The Journal has an all-star editorial board, and is poised to make a major impact in the biointerface area.

We are also expanding our international presence. A brief examination of the technical program of the 52nd International Symposium illustrates that nearly half the presentations are of foreign origin, and Prof. Grünze, Editor of the Biointerphases journal, is on the faculty of the University of Heidelberg. In anticipation of this continuing trend toward internationalization, the Board of Directors approved a new category of membership for those in economically developing nations, as defined by the World Bank. For U.S. $35.00, those in this category can become AVS members and obtain access to JVST and our other technical publications. In that regard attendees of the 52nd International Symposium included Prof. Li Chung Chen, President of the Taiwanese Vacuum Society, and Prof. Bernard Agius, President of the French Vacuum Society. During the year I also had the opportunity to meet with Prof. Cae Ok Kim, President of the Korean Vacuum Society, and Prof. Wilfrido Calexa, President of the Mexican Society for the Science and Technology of Surfaces and Materials (formerly the Mexican Vacuum Society). We are truly becoming an international organization.

Other progress concerns our identity. Although we have moved considerably beyond our vacuum-technology origins, many outsiders still view us as vacuum. To better define ourselves as an organization the Board of Directors recently changed our tagline from "The Science and Technology Society" to "Science and Technology of Materials, Interfaces, and Processing." The new tagline will appear on our materials and literature in the future.

In other areas, our E-store is now operational on our Website, the result of the work of Paula Grunthaner and Angela Klink. The E-store is open to non-members as well as members, and features educational and logo products. At this writing the educational category features 40 technical and educational offerings on aspects relevant to AVS, ranging from fundamentals of vacuum technology through the history of the organization.

Now, about the future. These are clearly interesting times, with changes occurring on a number of fronts. In my last column I noted that the 19 members of the Long Range Planning Group met in Jackson at the end of July to formulate action plans that the Society might take to fully capitalize on these changes (these details will appear in the minutes of the 30 Oct Board of Directors meeting). Recommendations were made in most operational areas including membership, finance, education, short courses, our identity, and, of course, the symposium and exhibition. Throughout, we sought to maximize our strength, which is our unique balance of science and technology. Each serves to advance the other, and this balance is accurately reflected in our membership, of which 42% are affiliated with industry and 42% with academic and government institutions. In contrast, the corresponding figures for the Materials Research Society are 27% and 68%, respectively, and for the American Physical Society, 20% and 76%.
One problem that still needs to be addressed is the overabundance of scientific and technical meetings. Simple economic considerations will make more intersociety cooperation inevitable. This is already well underway at the grass-roots level. For example, Prof. Fred Stevie at North Carolina State University recently organized a meeting that was a cooperative venture of the Mid-Atlantic Chapter of AVS, the North Carolina Section of the MRS, and the Central Carolina Section of ASM International. As another example, in March this year Prof. Neelkanth Dhere of the University of Central Florida organized a joint meeting of the Florida Society for Microscopy, the Florida Chapter of AVS, and Applied Surface Analysis. Many other examples can be cited; these are those with which I am the most familiar.

Cooperation like this must be strongly encouraged at both the local and national levels. While joint national AVS-MRS-SVC meetings are not yet a reality, the metals community showed that it can be done. In my Summer column I called attention to MS&T, a joint venture of five major metals societies that was held in Pittsburgh in September and will be held again next year in Cincinnati. Such consolidation can, and should, happen in the materials, interfaces, and processing communities as well. We are already taking steps in this direction—the 53rd International Symposium, which will be held November 12-17, in San Francisco, features two non-AVS conferences—the Industrial Physics Forum of the American Institute of Physics, and the Nanoimprinting and Nanoprinting Conference. This is an exciting development, and we can look forward to more of this in the future.

Regarding the 53rd International Symposium Exhibition, we need your input regarding the widening gap between the scientific program and the Exhibition. Which suppliers should have been exhibiting in Boston but were not there? Also, which suppliers need to be exhibiting in San Francisco? We would be delighted to obtain leads on suppliers who might be interested in establishing contacts particularly in emerging areas, where they could address a community of relatively new users who will be needing equipment. You can send your suggestions to any of us in leadership positions in AVS, and we will ensure that your comments will get to the right place.

Finally, I have certainly found this to be an interesting year. AVS succeeds through the dedicated and enthusiastic efforts and the countless hours invested by the professionals in the New York, North Carolina, and California offices; the Officers and Board of Directors; the Officers of the various Chapters, Groups, and Divisions; the members of the various Committees; the volunteers who organize meetings and symposia; and last but not least the scientists, engineers, and technicians who ensure a steady supply of top-notch presentations at our meetings and technical content for our journals. The opportunity to serve as President simply drives this point home, and I thank each of you for your efforts. Being a volunteer at any level is a lot of work, but I hope you agree that it is worth it. Your organization will continue to evolve under the able leadership next year of Christie Marrian and the year after that of Neal Shinn. Both are outstanding individuals, and we can continue to look ahead to a bright future.
Election Results

Congratulations to the following winners of the 2005 AVS International election.

**President-Elect:** Neal D. Shinn, Sandia National Lab

**Clerk:** Joe Greene, Univ. of Illinois, Urbana-Champaign

**Treasurer:** John W. Coburn, Univ. of California, Berkeley

**Directors (three-year terms):**

- Peter Sheldon, N.R.E.L.
- Bridget R. Rogers, Vanderbilt University
- Robert (Bob) A. Langley (one-year term)

**Trustees (three-year terms):**

- Rudolf (Rudy) Ludeke, IBM
- Susan B. Sinnott, Univ. of Florida, Gainesville

**Medard W. Welch Award Winner**

**Dr. Charles S. Fadley**, University of California, Davis, “for the development of novel techniques based on photoelectron spectroscopy and synchrotron radiation, and their application to the study of the atomic, electronic, and magnetic structure of surfaces and buried interfaces.”

Have you ever wondered how things work? Since he was a boy, Professor Chuck Fadley always did, and his enduring curiosity ultimately led to winning this year’s Medard W. Welch Award.

Chuck grew up in a small town called Norwalk, Ohio, population 10,000, and attended public school there. He came from a family that had a variety of talents. His father worked in many different fields from splicing long-distance telephone cables to bartending to selling life insurance. His mother worked for the town government, played organ at church for more than 55 years, and was a water color artist. She recently passed away at the age of 95.

Chuck’s father passed away when he was only 10 years old. His mother was later remarried to Anthony Pusateri, an immigrant from Sicily who found work in a small foundry until he retired to become a superb fisherman in nearby Lake Erie. Italian cuisine has since been one of Chuck’s favorites.

While growing up, Chuck loved to build gadgets of all sorts and work on cars, and this ultimately sparked his interest in experimental science. He graduated from high school in the post-Sputnik era, a time of remarkable acceleration in the development of American science. The U.S. was also looking for more young, bright students to enter science and engineering because of the possible threats posed by the then Soviet Union and the Cold War. He attended the Massachusetts Institute of Technology, studying chemical engineering, but always with a strong love of physics, and later received his M.S. and Ph.D. from the University of California at Berkeley in chemical engineering and chemical physics, respectively.

After post doctoral work in Sweden, Chuck taught physics at the University of Dar es Salaam in Tanzania, and then took up an appointment in the Chemistry Department at the University of Hawaii,
where he was a professor for about 20 years. He has also lived in France during this time, on sabbatical visits. He is currently a professor at the University of California at Davis and a senior scientist at the Lawrence Berkeley National Laboratory, a joint appointment in which he enjoys teaching both undergraduates and graduate students in Davis, as well as doing research at one of the world’s leading synchrotron radiation facilities, the Advanced Light Source in Berkeley. His wife, Susan Miho Nunes, from Hilo, Hawaii, is a writer of children’s books and adult fiction. They enjoy watching movies, going to the theater, and traveling together. His son, Adam Woltag is an architect in San Francisco and his daughter-in-law, Carrie McAlister is a realtor in the Berkeley area.

Being with family and friends from around the world over a good dinner, as well as teaching and doing research, are Chuck’s primary pleasures.

Chuck became involved with AVS in the early 1970’s. At this time x-ray photoelectron spectroscopy was just beginning to be used for surface analysis. Then, as now, AVS was the primary organization to turn to for anyone interested in surface and interface science.

He has made some of his closest friendships through his membership with AVS. Not only has that been a highlight of his association with AVS, but these connections have allowed him to travel all over the world. Through conferences, summer schools, and other science-related activities, he has visited over 40 countries. Some of his favorite places are Italy, France, Sweden, and Africa.

Asked if communicating the intricacies of science to people around the world is difficult if you don’t speak the same language, Chuck says no because English is the common medium and science is a language of itself. "Wherever you go, physics will always be physics and chemistry will always be chemistry. People understand each other through the language of science and it’s always a thrill to go to different countries and find a common bond."

It was with surprise and great satisfaction that Chuck learned of winning the Welch Award. He also felt humbled to be on a list with the highly accomplished prior winners of this award, some of whom are also personal friends.

When asked what he would like AVS members to know about him, he was afraid that they might know too much already! But all in all, he says that he’s been very lucky to be in an exciting, rewarding and always developing field, and that he cherishes the many friendships around the world that have come from it. It is also a great satisfaction to see the younger generation of scientists with whom he has worked go on to have successful careers and personal lives.

AVS is proud to have Chuck as a member. His curiosity has led him in many scientific and geographic directions. We shall see where it carries him next.

Albert Nerken Award  Winner

Dr. Christopher R. Brundle, C.R. Brundle and Associates, “for pioneering early development in the field of electron spectroscopy, and sustained applications to surface science and a wide range of industrial materials characterization issues.”

In 1974, a young researcher from Bradford University, England, Christopher Richard Brundle (Dick) was invited to give a paper in the Surface Science Division at the AVS National Conference, held in New York. Little did he know that after this lecture he would join that organization and not only be the first ever Peter Mark Memorial Awardee in 1980, but also become the 2005 Albert Nerken Award winner.

Dick has been a very active member in AVS on various committees; in fact, he is looking forward to serving as the 2006 Local Arrangements Committee Chair in San Francisco. Dick has seen AVS evolve and grow into the organization that it is today. For him and most AVS members, it is a place to grow professionally and personally. In 1974 it was the only society that offered an environment where it was possible to discuss scientific and technical topics across a wide range of professional disciplines. Since that time Dick has seen AVS expand its areas of interest greatly, with new Divisions and working groups evolving regularly. Examples are the Applied Surface Science Division, and the Manufacturing Science and Technology Technical Group, both of which he was involved with in their early development.

Dick never actively intended to pursue an academic career in science, but, since it was a subject he
found easy in high school, he pursued a degree in chemistry at Manchester University and then a Ph. D. in physical chemistry at Imperial College, University of London. In 1969 and 1970 he worked as a post doc at Bell Labs, NJ, returning to the UK to take up a Lectureship in Physical Chemistry at Bradford University.

In 1975, he moved from England to San Jose, California, to work for IBM Research, where he remained for 17 years. This was a big move for both he and his wife, Jenny (now married 35 years). Dick says that Jenny has been very supportive of him, especially at the time of the move. He also says that he was very supportive of her in California when she decided to go back to school. In England, Jenny was as a social worker, but when they moved, her credentials couldn’t be easily used in the United States so she decided to return to school and get her Ph.D. in psychology.

Dick has traveled quite a bit throughout the world and has lived briefly in a few different places in addition to California and England. In 1984, he and his family lived in Hawaii while he took a sabbatical from IBM Research. He taught and did research at the University of Hawaii in Honolulu. Interestingly that was with Professor Charles Fadley, this year’s AVS Welch Award winner. He has also spent sabbatical time at Heidelberg, Germany, and Liverpool, England. For the last 12 years, since leaving IBM, he has worked as an independent consultant in the area of surface and ultrathin film analysis and characterization, with a period in the middle where he was Director of an analytical lab at Applied Materials, Santa Clara.

Dick and his wife have two children, a son, 32 who is a punk rock guitarist and anti-World Trade Organization activist in Seattle, and a daughter, 29, who recently graduated from U. Hawaii in biology and environmental science.

Besides science and technology, Dick has a strong interest in music. He actually has a small record label, Fiddling Cricket Music, which is associated with Fiddling Cricket Concerts, a music series he runs, based out of San Jose. It is something that Dick truly enjoys as musicians are usually very interesting people. Last year he toured Australia with one of the label’s bands.

Dick is also quite athletic having been a soccer player and runner. He was the Captain of the IBM team which won the corporate cup the first time it was awarded in the AVS Annual Run. They trained everyday during their lunch hour, running through the hills around IBM Research in San Jose. Now that Dick has recently moved closer to the Pacific Ocean in the Santa Cruz area, he also has a chance to renew an interest in windsurfing.

He thinks of this award as somewhat of a lifetime achievement award. It sums up all the scientific work and, in particular, its application to technology, that he has done and allows others to recognize his efforts. He was surprised to hear that he had won considering the competition and previous winners.

Asked if there is one thing in particular that he would like other members of AVS to know, he states, “I’m afraid that they might already know too much about me!” He also describes himself in one word as a curmudgeon. Now this may seem a little strange, but it is because he has a tendency to stir issues up, but only (well, mainly) because he wants to make sure that things are done correctly. This attitude is probably what has gotten him to this point and allowed him to achieve so much in his career. AVS is happy and proud to have such an esteemed member, curmudgeon and all.

**John A. Thornton Memorial Award and Lecture Winner**

**Prof. Stan Veprek**, Technical University Munich, "for the generic design concept of strong and hard materials as well as their deposition as thin films by plasma assisted techniques."

A young man once asked his uncle where the origin of energy from the sun came from. This young man’s uncle told him that he thought that the energy from the sun came solely from burning hydrogen with oxygen. Doubting that answer, he went and began to calculate different formulas and
came to the conclusion that his uncle’s theory was wrong. He went back to his uncle and showed him his findings which unfortunately made his uncle upset but this young man didn’t mind because he had discovered the answer to a question he had long been curious about.

A few years later he turned his love for science into his career. This man is Stan Veprek, winner of the John A. Thornton Memorial Award. Born and raised in the Czech Republic, Stan attended Charles University in Prague. Here he studied physics and later went on to the University of Zurich where he received a Ph.D. in chemistry and inorganic chemistry. Stan was a Full Professor and Director of the Institute for Chemistry of Inorganic Materials at the Technical University of Munich from 1989-2004.

In October of 2004, Stan officially retired based on the German law that all professors and employee have to retire at the age of 65. With more free time on his hands he continues to enjoy researching superhard nanocomposites and in a quest to improve his understanding of these and other new materials.

He also is enjoying time with his family. His wife’s name is Martiza and she is from the Netherlands. She has a Ph.D. in physics and worked in Phillips Laboratories until they were married. She now works part-time with him in his research group and they have published several scientific papers together.

They have two daughters, Nynke (Dutch for Catherine) age 14.5 and Libuse (a Czech name) age 13. Stan also has two sons Miroslav and Ratko. Miroslav works at the Swiss Embassy in Moscow and is responsible for the cultural exchange Switzerland-Russia. Ratko, who just graduated from the Federal Institute of Technology in Zurich in the field of computer-aided science/physics, is starting on his Ph.D. work. Stan had the opportunity to work with Ratko along with Professors Argon and Parks from MIT where they jointly developed the new constitutional law for modeling of the mechanical properties of the superhard materials.

In addition to time with his family, Stan also enjoys classical music, good wine, and mountaineering. He has been an avid climber of many difficult routes in the Swiss Alps.

The award announcement came as a pleasing surprise to Stan. He was speechless and it took him a while to believe that he had won.

He has seen the world of science change as the years have gone by. With this he has seen the evolution of AVS, and has developed many friendships and had many opportunities to travel with his career and with AVS. He is a very busy traveler still and travels about 200,000 miles a year! He is currently making many trips to Singapore where he is working with the Singapore Institute of Manufacturing Technology and teaching a course on materials science at the National University of Singapore.

He hopes that for the future of science, there will be more originality in research and discoveries. He hopes that the next generation develops along with the technology and tries out new experiments to help advance the world of science.

From curious teenager to award-winning scientist, AVS is lucky to have Stan Veprek as one of its members.

**Peter Mark Memorial Award Winner**

**Dr. Jane P. Chang**, University of California, Los Angeles, “for pioneering work in the synthesis, processing and characterization of novel materials for applications in microelectronics and optoelectronics.”

One woman’s interest in mathematics turned into a career in science. With hard work, it led to winning the Peter Mark Memorial Award. This woman is Dr. Jane P. Chang.

Jane, originally from Taiwan, received her B.S. degree in chemical engineering from the National Taiwan University. She later received her M.S. and Ph.D. at the Massachusetts Institute of Technology in chemical engineering.

She first became aware of AVS through her graduate advisor who had her present her research at
various AVS symposia. Jane, now Associate Professor at University of California at Los Angeles in the Department of Chemical and Biomolecular Engineering, continues to be a very active member regularly attending conferences and presenting her research. Jane says that AVS has allowed her to advance in her career in ways that may not have been possible if she was not involved.

One particular division that has allowed this is the Plasma Science and Technology Division. The contacts that she has made at the divisional level have given Jane the opportunity to get feedback from the scientific community abroad.

A favorite part of her field of study is seeing the impact that the discovery of new materials has on many facets of life. In addition, she loves to teach at the undergraduate level because it allows her to watch the progression of her students and see how the next generation of scientists is making an impact on the future of science.

Jane was very excited and honored to win this award. She was also very happy to be among the other candidates, many of whom she knows both professionally and personally.

This award has encouraged her to continue her work and build and expand on fundamental surface nanoscale technology. Along with continuing her research and teaching, she also loves spending time with her family. Her husband, who she met while doing her graduate work at MIT, and she have a 14 month old daughter named Katherine. Jane loves watching her grow and is thrilled that she is now beginning to speak. She also enjoys yoga, cooking, and hiking.

If there is one word that would best describe Jane, it would be persistence. It is critical in the field of science to have this characteristic to accomplish goals and complete experiments. Her persistence has allowed her to be a pioneer in many different research areas and has earned her this award.

She would really like to influence more women to enter the science field and discover all the wonderful possibilities that it has to offer. The climate is changing and it is very doable for women. There are many opportunities arising in both research and academia.

Dr. Jane Chang’s career is one that many women should admire. Her persistence and love for science, along with her AVS involvement should be a model for future women scientists. We congratulate Jane on her award and are happy to have her as a part of AVS.
This section of the Newsletter is designed to highlight some of the benefits of your membership as well as to provide general information on your Society. Please send us feedback on this section or any AVS topic by sending e-mail to membership@avs.org or calling Membership Services at 212-248-0200.

**AVS 2006 Award Nominations**

Do you know people who, in areas of interest to AVS, should be recognized for:

- Outstanding research: Medard W. Welch Award
- Outstanding discoveries and inventions: Gaede-Langmuir Award; this award will be given biennially in even-numbered years.
- Outstanding contributions to the solution of technological problems: Albert Nerken Award
- Outstanding research or technological innovation with emphasis on the fields of thin films, plasma processing, and related topics: John A. Thornton Memorial Award; this award will be given biennially in odd-numbered years.
- Outstanding theoretical or experimental work by a young scientist or engineer: Peter Mark Memorial Award
- Outstanding performance in technical support of research and development: George T. Hanyo Award
- Excellence in graduate studies: Graduate Student Awards
- Sustained and outstanding technical contributions: Fellow of the Society
- Eminent service to AVS: Honorary Membership

**Membership Renewal Season**

AVS membership renewal season officially began on September 7, 2005. Try out our online renewal form to save yourself some time! Remember to renew by December 31 to ensure no disruption in membership services!

**New Members**

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**Student Members**

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<td>Jorge Prieto</td>
<td>Trevor Willey</td>
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**Society of Physics Students Members**

- Austin Basye
- Roman Bronshtryn
- Brandon Bucholz
- Brittany Chase
- Meghann Crane
- Eric Fellheimer
- Jeffery Fendt
Post Doc Members

- Sunnie Lim
- Trevor Willey

Corporate Members

AVS wishes to thank the following Corporate Members for their support. Corporate Membership benefits include voting privileges, complimentary subscriptions, recognition, promotional opportunities, short course discounts, and more.

Corporate Members 2005

- A&N Corporation
- Alcatel Vacuum Products
- Altair Technologies, Inc.
- Applied Surface Technologies
- BOC Edwards
- California Brazing
- CeramTec North America Corp.
- Duniway Stockroom Corp.
- Electro Mechanical Solutions, Inc.
- G&P Technology
- Genesis Vacuum Technologies
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<td>Kratos Analytical</td>
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<td>Kurt J. Lesker Company</td>
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<td>McAllister Technical Services</td>
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<td>National Renewable Energy Laboratory</td>
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**Corporate Members 2006**

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Winter 2005
The 2006 AVS and SEMATECH sponsored International Conference on Microelectronics and Interfaces (ICMI '06) will continue the mission of the previous six annual ICMI conferences: to provide a unique opportunity for industrial, government, and academic scientists and engineers working in the areas of microelectronic devices, processing, and process integration to gather and exchange ideas regarding the challenges of nanodevice fabrication. However, ICMI '06 will offer several new twists:

- SEMATECH’s participation in ICMI ’06 planning and promotion
- Location change from Santa Clara, California, to Austin, Texas
- Elimination of parallel oral sessions
- Expansion of daily poster sessions

These changes will support the very multidisciplinary nature of this conference, enable focused oral sessions of quality invited and contributed talks, and facilitate a broad base of topics to be presented through vibrant poster sessions.

Keynote Speakers

- Dr. Thomas Theis, Director, Physical Sciences, IBM Research, “Nanoscience and The Future of Information Technology”
- Dr. David Seiler, Chief of Semiconductor Electronics Division, NIST, “Extending CMOS Measurements to The Nanoscale”
- Jamie McLeroy, J.D., Senior Counsel, SEMATECH, “Trends in State Sponsored Research and Development”

Session Topics:

- Stress Engineering in Channels and Films
- Gate Stack and Junction Engineering
- Alternate Charge Transport-based Devices
- Formation, Patterning, and Characterization of Films and Interfaces
- Contacts and Interconnect Stack Engineering

ICMI '06 presenters will once again have the option of publishing their work in an issue of JVST B, grouped with other papers submitted from the conference.

For more details, please visit www.icmiconference.org or contact della@avs.org, 530-896-0477.
October 30-November 4, 2005  
Boston, Massachusetts  

Web: www.avs.org

AVS is pleased to announce and congratulate the winners of our Housing Reservation Incentive Program. Reserving a room in our convention block helped AVS meet its financial commitments to the host city and retain lower registration fees as well as a high quality conference with the features and services you are accustomed to.

**Drawing for Full Week Stay at Sheraton, Boston ($1,500 value):**

- Wesley Nieveen, Evans Analytical Group LLC
- Ioana Volintiru, Eindhoven University of Tech

**Drawing for Full Week AVS-52 Symposium Registration ($550 value):**

- Ryotaro Yamaguchi, Tohoku University
- Gary Korba, 3M Corp. Res. Anal. Lab

**Drawing for Gift Certificates for the Sheraton Boston ($25 value):**

- Guillaume Bussière, UBC
- Chris Tasker, Oregon State University
- Kevin Ball, North Carolina State University
- Paul Wang, Bradley University

**First 25 Reserved for AVS Membership 2006 ($95 value):**

- Jay Lewis
- Gregory Grynkewich
- Brian Haines
- Raul Caretta
- Carl Steinke
- Hisataka Hayashi
- Chi-Fung Lo
- Wayne Highland
- Jane Chang
- Ganapati Myneni
- Gerald Hammer
- Gary Korba
- Judy Wong
- John Hartnett
- Enrico Keim
- Alain Diebold
- Roger Stockbauer
- Michael Trenary
- William Sproul
- Osamu Nishikawa
- Robert Hamers
- Ian Hodgkinson
- Yoshihisa Watanabe
- Robert Corn
- Ned Ianno

**Other Contest Winner:**

**Tell-a-Friend for Full Week AVS-52 Symposium Registration ($550 value):**

- Keith Slinker, Univ. of Wisconsin-Madison

**Completed AVS-51 Survey for AVS-52 Full Week Symposium Registration ($550 value):**
● Seth Darling, Argonne National Lab
● Richard Hagland, Vanderbilt University
● Peter Somssich, Osram Sylvania, Inc.

Prize Wheel Winner for Full Week AVS-53 Symposium Registration ($550 value):

● Bridget Rogers, Vanderbilt University
International Conference on Metallurgical Coatings and Thin Films

May 1-5, 2006
San Diego, California

Web: http://www2.avs.org/conferences/icmctf

The International Conference on Metallurgical Coatings and Thin Films (ICMCTF) is internationally recognized as a vibrant technical conference that integrates fundamental and applied research focused on thin film deposition, characterization, and advanced surface modification techniques leading-edge technology. ICMCTF is the premier international meeting in the field promoting global exchange of information among scientists, technologists, and manufacturers.

The conference draws more than 600 attendees each year with 50 or more technical sessions. The poster sessions are well attended and are an important component of the technical program. Additional elements of the conference program include a two day exhibition of the latest equipment, materials and services used for the deposition, monitoring and characterization of coatings and thin films. Short courses and tutorials are offered as well. Symposia have been organized to address experimental, theoretical, and manufacturing issues associated with development of new coating materials and processes, dynamics of film growth, development of functional coatings, and evolving approaches to scale-up for commercial applications.

There will be eight concurrent symposia on processing and characterization of coatings for use at high temperature, wear protection, optical and decorative purposes, magnetic and electronic applications, as well as in biotechnology. There will be special focus sessions on pulsed plasmas, coatings in biotech and biomedical applications, self-assembled coatings, and computational materials science.

Quo Vadimus session entitled "Surface Engineering and the Aerospace Industry" will focus on recent trends in the aerospace industry and their impact on the coating industry and the thin film community.

For more information, please contact Mary Gray, ICMCTF, 14001-C Saint Germain Dr., Suite 136, Centerville, VA 20120, 703-266-3287, fax 703-986-8877, icmctf@mindspring.com.

Third International SiGe Technology and Device Meeting

May 15-17, 2006
Princeton, New Jersey

Web: www.istdm2006.org
Abstract Deadline: January 15, 2006

The third International SiGe Technology and Device Meeting (ISTDM) will provide a forum for presenting and discussing device-related topics ranging from SiGe and other group-IV materials (such as SiGe:C) and process technologies to different device classes and circuits. The meeting will consist of both invited and contributed papers. Contributed papers are solicited in the following technical areas:

- **Device-related materials:** Wafer fabrication (virtual substrates, SOI, SGOI, GOI, etc.), strain adjustment and strain relaxation methods, defect engineering and characterization, layer transfer, selective growth, novel group-IV alloys and
heterostructures.

- **Process Technology**: Cleaning and treatment of SiGe(C) surfaces, epitaxy, elevated S/D contacts, SiGe gate materials, gate dielectrics on SiGe and Ge, dopant diffusion and point defects, dry etching, contact technology, process and impurity control, tooling, economics of manufacturing, process integration, local and global strain, TCAD.

- **Devices**: Hetero-CMOS, strained MOS, HBTs, BiCMOS, MODFETs, optical devices, IR devices, tunneling, coherent and quantum devices, high-speed and THz devices, germanium devices, MEMS, thermo-electric devices, novel devices, device modeling.

- **Circuits / Applications**: Digital logic, VLSI, MMICs, SOCs, amplifiers, mixers, wireless and fiber-optic interfaces, analog / mixed signal systems and subsystems, communications systems, components for optical communication, imaging, sensing and radar systems, emerging and novel applications.

For more information, please visit [www.istdm2006.org](http://www.istdm2006.org).

### New Mexico Chapter and ASSD Symposium and Surface Analysis

**May 22-26, 2006**  
Albuquerque, New Mexico

**Web**: [http://www-chne.unm.edu/avs/avsinformation.htm](http://www-chne.unm.edu/avs/avsinformation.htm)

This joint meeting will feature technical sessions, short courses, and a one-day exhibition. For more information, please contact Julia Fulghum (technical sessions), jfulghum@unm.edu; David Adams (short courses), dpadams@sandia.gov; or Guild Copeland (Exhibits), gcopel@sandia.gov. You may also visit [http://www-chne.unm.edu/avs/avsinformation.htm](http://www-chne.unm.edu/avs/avsinformation.htm).

### Thin Films 2006: The 3rd International Conference on Technological Advances of Thin Films & Surface Coatings

**December 11-15, 2006**  
Singapore


The International Conference on Technological Advances of Thin Films & Surface Coatings ("Thin Films 2006") is a biannual event of knowledge exchange and interactive platform for researchers and engineers from industry, research laboratories and academia. Thin Films 2006 is the third of this series. Following its success as Thin Films 2002 and Thin Films 2004, Thin Films 2006 will bring together state-of-the-art developments on all aspects related to the processing, characterization and applications of thin films and surface coatings.

For more information, visit [http://www.thinfilmsingapore.org/](http://www.thinfilmsingapore.org/) or contact Sam Zhang, msyzhang@ntu.edu.sg.

### Related Conferences: Society of Vacuum Coaters 49th Annual Technical Conference

**April 22–27, 2006**  
Washington, D.C.

**Web**: [www.svc.org](http://www.svc.org)
The Technical Conference of the Society of Vacuum Coaters is a forum for the interchange of information between those engaged in the use and development of vacuum coatings for large- and small-scale applications.

Presentations will be made in technical sessions, on the following topics: Smart Materials, Optical Coating, Vacuum Web Coating, Tribological & Decorative Coating, Plasma Processing with an emphasis on High-Power Impulse Magnetron Sputtering (HIPIMS), Process Control & Instrumentation, Large Area Coating, and Emerging Technologies.

New Hot Topic Joint Sessions will focus on “Processes, Materials, and Coating Systems for Flexible Electronics,” and “Biomedical and Pharmaceutical Applications of Vacuum Processes and Coatings.” The Heuréka! Post Deadline Evening Sessions allow presentations to be made on new research achievements, and recent developments for new applications.

An Innovator’s Showcase of vendor presentations on new products and services and the Exhibit featuring over 200 exhibits take place on April 24–25, 2006. Unique features of each SVC Conference include the “Meet the Experts” Corner in which small groups of conference attendees interact informally with experts on narrowly defined specific topics over a three-day period. In addition the Technology Forum Breakfast topics and the Donald M. Mattox Tutorial Program provide additional opportunities for high quality interactions.

For more information, please contact the Society of Vacuum Coaters, 71 Pinon Hill Place NE, Albuquerque, NM 87122-1914, 505-856-7188, svcinfo@svc.org, www.svc.org.
At the second symposium of the Society, which was then called the Committee on Vacuum Techniques, a Life Membership was awarded to A.S.D. Barret, who had been the banquet speaker at the first symposium at Asbury Park, New Jersey in 1954. Later, the term “Life Member” was changed to “Honorary Member.”


After obtaining an engineering degree at King’s College, London, he was awarded a scholarship from Imperial Chemical Industries and studied at MIT, before returning to England to work for ICI. Although he was known as Arthur at MIT, he was called Stephen in England.

During World War II, he was employed by Tube Alloys, the code name for the British Nuclear Weapons program, later folded into the Manhattan Project in the U.S. He also served as a night watchman at St. Paul’s Cathedral during the blitz. He joined the W. Edwards Co. Ltd in 1946 and, as Technical Director, was largely responsible for making the company a major force in the vacuum industry. This was partly due to the introduction of metal components; Edwards had previously made glass laboratory equipment.

Another Honorary Member, Collin Alexander, remembers attending a demonstration of metal vacuum components in Toronto in May 1950. The company changed its name to Edwards High Vacuum, Ltd. in 1954. Barret also made Edwards a leading supplier of silicone pump oil. Les Holland, a Welch Award winner who worked at Edwards for many years, noted that he was always willing to support new projects and risk new product development. Barret also had a good eye for new talent!

He was one of the core group which founded IOVST (which later became the International Union for Vacuum Science, Technique and Applications, IUVSTA) at the vacuum conference in Namur, Belgium in 1958 and served as its first Secretary. When the IOVST structure was changed to IUVSTA in 1962, Barret served as the UK Councilor until 1968 and, at the end of his term, was made an Honorary Member of IUVSTA. He was also the first chairman of the International Standards Organization’s Technical Committee on Standards in Vacuum Technology, TC112.

He left Edwards in 1960 but continued as a consultant, a Director of Philips, UK, and an active Chairman of a small private company well into his 80’s.

**Memories of W. Edwards & Co. and A.S.D. Barret from Basil Power**

Mr Barrett recruited me to Edwards in November 1946. I retired in 1978.

W. Edwards & Co. was an unusual company. W. Edwards, who was dead by the time I joined, had founded a small business engaged in furnishing
laboratories. His son, F.D. Edwards, was a science lecturer at Northampton Polytechnic in Islington (now City University). Sometime in the 1920’s he resigned and joined his father to develop the business. They began to expand the business by factoring and repairing general laboratory equipment; this included imported vacuum pumps. They also began to manufacture a limited range of simple vacuum apparatus aimed particularly at laboratories.

Before the war they were situated at Allendale Works, Southwell Road, London, SE 5. The premises were so restricted that imported pumps had their crate lids pried off on the pavement outside for the ‘Supplied by W. Edwards’ label to be attached, and then sent on their way. Industrial applications for high vacuum were few; it was still predominately a laboratory tool. At the beginning of the war imports from the continent ceased. There was an increasing demand for radio valves and electronic tubes of all sorts for the technological war effort. I believe Edwards received encouragement and help from the government to expand building pumps itself.

When I joined Edwards the company was about 200 strong and had moved into a small factory on Kangley Bridge Road, Lower Sydenham, SE 26, partitioned to provide, among other things, a drawing office, a test laboratory and a research and development laboratory. It had been presented with a great opportunity.

Advanced radio transmitters and receivers, domestic television and domestic refrigerators, and the use of various vacuum processes on an industrial scale were just some of the many applications of vacuum about to boom and continental competition was very weak after the war - and the company had acquired, I think only a few years before my arrival, a dynamic, imaginative, and adventurous Technical Director, A.S.D. Barret. He had set out to build a strong technical team, but so far none of its members had lectured or published or was widely known among vacuum users. The product range was limited and old fashioned. Edwards was not widely recognized as a centre of excellence and information.

Mr. Barrett had infectious enthusiasm, willingness to listen to ideas and to authorize R&D programs when the outcome was by no means certain. He was happy for his staff to go on all sorts of technical visits worldwide, to publish papers, to attend and contribute to conferences, etc., and he made sure that information came their way from a wide range of technical publications. He himself was an active ambassador—getting to know key people in relevant companies, universities, and government laboratories.

Mr. Barrett resigned from the company I think about 1960. Edwards had by then moved to a purpose-built factory in Crawley a new town, with extensive laboratories and drawing office and probably employing about 700 people.

Members of the technical team had become known worldwide and the company was generally recognized as a center of excellence and source of authoritative advice. The product range was comprehensive and included a specialized processing plant e.g. in the fields of thin film coating, freeze
drying, metallurgy, TV tube manufacture. The company had launched the journal *Vacuum*, which became the recognized British vacuum journal.

Of course, Mr. Barrett does not deserve sole credit for all this but, as Technical Director, he had a dominant and often decisive part to play. My years as part of his team were among my happiest at Edwards.
AVS Board Meetings

- **Monday, December 12, 2005**, New York, New York

2006

- **Monday, May 1, 2006**, San Diego, California in conjunction with the International Conference on Metallurgical Coatings and Thin Films (ICMCTF)
- **Sunday, June 25, 2006**, Albany, New York in conjunction with the AVS Upstate New York Chapter Symposium
- **Sunday, November 12, 2006**, San Francisco, California in conjunction with the AVS 53rd International Symposium and Exhibition
- **Monday, January 8, 2007**, New York, New York

AVS International Symposia

**November 2006**

12–17
AVS 53rd International Symposium (Technical Programs, Topical Conferences, Short Courses, and Equipment Exhibition), San Francisco, CA, USA, [www.avs.org](http://www.avs.org).

**October 2007**

14–19
AVS 54th International Symposium (Technical Programs, Topical Conferences, Short Courses, and Equipment Exhibition), Seattle, WA, USA, [www.avs.org](http://www.avs.org).

**October 2008**

19–24
AVS 55th International Symposium (Technical Programs, Topical Conferences, Short Courses, and Equipment Exhibition), Boston, MA, USA, [www.avs.org](http://www.avs.org).

**November 2009**

8–13
AVS 56th International Symposium (Technical Programs, Topical Conferences, Short Courses, and Equipment Exhibition), San Jose, CA, USA, [www.avs.org](http://www.avs.org).

AVS Short Courses

For the list of upcoming short courses visit [http://www.avs.org/education.schedule.aspx](http://www.avs.org/education.schedule.aspx).

AVS Technical Meetings and Topical Conferences

For the list of AVS-sponsored technical meetings and topical conference, visit the online calendar at [http://www.avs.org/meetings.schedule.aspx](http://www.avs.org/meetings.schedule.aspx).
The AVS Newsletter is published quarterly by AVS, 120 Wall St., 32nd Floor, New York, NY 10005-3993, 212-248-0200, fax 212-248-0245, avsnyc@avs.org, www.avs.org, to provide timely information to its membership.

AVS Newsletter Article Contributions

Each issue we solicit article contributions as well as images. Deadlines are the first of February, May, August, and November. Please send your contributions to:

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